Characterization of carotenoids in organic blueberry (Vaccinium spp.) grown in southern Brazil

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Blueberry (Vaccinium spp.) is a fruit rich in flavonoids, tannins and phenolic acids. Studies indicate beneficial health properties associated with their high antioxidant activity against the development of chronic diseases. Moreover, it also has reports of beneficial actions on the quality of vision. Carotenoids are natural pigments that include a large number of compounds, most of those with biological activity. Alpha and beta-carotene have pro-vitamin A activity while lutein and zeaxanthin may play a role in reducing the development and progression of age-related macular degeneration. As there is very little information about the profile of carotenoids in blueberries, the aim of the present study was to characterize these compounds in this fruit by HPLC analysis. Rabbiteye organic blueberries were produced in Camaquã (Southern Brazil) and harvested between December 2009 and January 2010. The analyses were carried out in an Agilent high performance liquid chromatography with a UV/Vis detector. The results show a small concentration of zeaxanthin (26.25 µg/100g FW) and beta-carotene (30.64 µg/100g FW), but higher amounts of lutein (158.49 µg/100g FW). It represents 1.53 % of the USA recommendation daily intake for beta-carotene and 10.87 % for lutein and zeaxanthin, respectively. These results are similar to other two studies with blueberries from Bulgaria and Finland but larger than those found by the USDA. Although blueberries are not a great source of carotenoids, these substances, in addition to anthocyanins and other phenolic compounds, are also responsible for the healthy properties of this fruit, especially related to vision.

Key Words: blueberry (Vaccinium spp.), carotenoids, HPLC analysis.